94 parts of the polymethyl siloxane film are measured. FIG. 6 shows the measurement result. From a deviation in these fluorescence intensities, the uniformity of in-plane curing of the polymethyl siloxane film is evaluated. The smaller the deviation in fluorescence intensities is, the higher uniformity is. Conversely, the greater the deviation in fluorescence intensities is, the lower uniformity is.

(Ninth Embodiment)

The present embodiment is different from the eighth embodiment in that the film thickness distribution of a polymethyl siloxane film is evaluated from the intensity distribution of fluorescence emitted from the intensity distribution of fluorescence emitted from the polymethyl siloxane film.

First, the steps 1 to 4 of the first embodiment are executed, and a polymethyl siloxane film of 1 micron in thickness is formed. The electron beam energy in the step 4 is same that of the eighth embodiment.

Next, Ar^+ laser of 514.5 nm are emitted to 94 parts on the polymethyl siloxane film, and the intensities of fluorescence emitted from the above 94 parts of the polymethyl siloxane film are measured.

There is a relationship between the intensity of fluorescence emitted from the polymethyl siloxane film and a shrink rate of the polymethyl siloxane film, and

thus, such relationship is obtained in advance. FIG. 7 shows an example of the relationship. The actual film thickness of a portion emitting fluorescence is obtained as a produce between the design film thickness of the polymethyl siloxane (here, referred to as 1 micron) and the shrink rate corresponding to the intensity of fluorescence at that portion.

Therefore, a product between the design film thickness and the shrink rate that corresponds to the intensity of fluorescence is computed for a respective one of the above 94 parts, whereby the film thickness distribution of the polymethyl siloxane film can be evaluated.

(tenth Embodiment)

The present embodiment is different from the ninth embodiment in that the film thickness distribution of the polymethyl siloxane film is evaluated while forming the polymethyl siloxane film.

First, the steps 1 to 3 of the first embodiment is executed.

Next, the step 4 of the first embodiment is executed, and Ar^+ laser of 514.5 nm are irradiated to 94 parts on the polymethyl siloxane film on the way of film forming. Then, the film thickness distribution of the polymethyl siloxane film on the way of film forming is evaluated in accordance with the method described in the ninth embodiment. That is, the polymethyl siloxane

film is formed while the film thickness is monitored. As a result of monitoring, if a predetermined film thickness distribution is not obtained, for example, the film forming condition is changed on the way of film forming or film forming is cancelled.

(Eleventh Embodiment)

In the present embodiment, a description will be given with respect to a method utilizing fluorescence from a polymethyl siloxane film for alignment.

First, the steps 1 to 3 of the first embodiment are executed.

Next, in a reduced pressure atmosphere, a semiconductor substrate is heated by a hot plate of 400℃ for 30 minutes. At this time, as shown in FIG. 8, an electron beam light interrupt mask 26 is disposed upwardly of the semiconductor substrate 1, and electron beam 24 is irradiated to only an alignment portion of a marginal portion of a polymethyl siloxane film 27 formed on the top layer of the semiconductor substrate 1. At this time, the irradiation conditions are 6 KeV in the irradiation quantity and 500 $\mu C/cm^2$ in the total irradiation quantity, for example. Further at least one parameter can be changed when heating treatment is carried out with irradiation process, and similar effects as the first embodiment can be attained.

Now, a description will be given with respect to a method for aligning the semiconductor substrate 1